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DEPARTMENT OF & GAME

Jerry M. Conley, Director

Mullan Hatchery

Annual Report

October 1, 1979 - September 30, 1980

by

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Fish Hatchery Superintendent I

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Mullan Hatchery

ABSTRACT

During the 1980 fish year some 1,035 pounds of cutthroat, rainbow and kokanee fry and fingerlings were planted in lakes and streams of Area I. This amounts to 552, 460 fry of various sizes from 1 inch to 6 inches.

Hagerman Hatchery transferred 91,504 catchable sized rainbow trout that were planted in streams, reservoirs and lakes of Region 1. This amounted to 30,260 pounds of rainbow from 8 to 12 inches in length.

We fed 8,060 pounds of Oregon Moist fish food to the production fish of the hatchery and 2,000 pounds of state contract dry feed was fed to the catchable rainbow and brood stock being held at the hatchery. The conversion rate for production was 9.72:1.

The cost of Oregon Moist fish food was $2,749.40. The cost of state contract dry feed was $372.54. The cost of each pound of fish produced was $3.02 for fish food. When all costs were included for all hatchery operations, including distributing fish transferred from Hayspur Hatchery, each pound of fish cost $31.77.

The eruption of Mount $t. Helens caused a delay in the fish planting schedule and a considerable change in the physical environment of the planting area.

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OBJECTIVES

The objectives of the Mullan Hatchery are to:

1. Raise about 6,000 pounds of Westslope cutthroat to plant in Hayden Creek, tributary to Hayden Lake. These fish will be about 5 to 8 inches in length.

2. Receive green kokanee eggs from Coeur d'Alene Lake, hatch the eggs during the winter months, and plant the fry during the following summer.

3. Receive green rainbow-cutthroat hybrid eggs from Hayden Creek fish trap to rear and restock Hayden Lake.

4. Keep small broodstock of Westslope cutthroat trout for egg taking and use fry to stock mountain lakes.

5. To receive approximately 90,000 catchable size rainbow from Hayspur Hatchery to stock in waters of Region 1. Waters to plant include:

    A. South Fork Coeur d'Alene River (Golconda to Hatchery)
    B. Coeur d'Alene River (North Fork to Yellow Dog)
    C. North Fork Coeur d'Alene River (Bumblebee to Breakwater)
    D. St. Joe River (Huckleberry campground to Bird Creek)
    E. North Fork St. Joe (Loop Creek to Squaw Creek)
    F. Marble Creek
    G. Big Creek (St. Joe)
    H. St. Maries River (Santa to Gold Center)
    I. Merry Creek
    J. Gold Creek Pond
    K. Day Pond
    L. Pinehurst Pond
    M. Eagle Pond
    N. Elsie Lake
    0. Dismal Lake

6. Stock mountain lakes with fry plants:

    A. Crystal Lake (Cataldo Area)
    B. Upper Glidden Lake
    C. Revett Lake
    D. Crater Lake
    E. Upper Stevens Lake
    F. Gold Lake (Mullan Area)
    G. Noseeum Lake
    H. Steamboat Lake

INTRODUCTION

Mullan Hatchery is located four miles east of Mullan, Idaho. It receives its water supply from the South Fork Coeur d'Alene River and requires 3-4 cfs of water to operate. The hatchery has:

3 raceways	4 feet x 65 feet x 22 inches deep
2 raceways	6 feet x 65 feet x 20 inches deep
1 raceway	12 feet x 65 feet x 20 inches deep

2 raceways	6 feet x 65 feet x 3 feet deep
1 pond	30 feet x168 feet x 3.5 feet deep
1 pond	25 feet x132 feet x 3.5 feet deep
1 pond	35 feet x 78 feet x 3.5 feet deep
19 vats	13 feet 6 inches x 2 feet 4 inches x 20 inches deep

The water temperature ranges from 33 degrees in January to 58 degrees in August. The large dirt ponds work very well in cutthroat production.

Mullan Hatchery is owned by the Shoshone County Sportsman Association. The Association owns all grounds, buildings and facilities. A mill levy is raised by the county tax rolls to pay for the maintenance of the buildings and grounds. The Idaho Fish and Game Department staffs the permanent personnel and provides the trucks and fish production costs for the station.

Mount St. Helens Eruption

On May 18, 1980, Mount St. Helens, in western Washington erupted in a volcanic explosion and blanketed parts of Washington and northern Idaho with a layer of volcanic ash. Mullan Hatchery was in the path of the ash cloud as it drifted east. The sky grew very dark about 5:00 in the afternoon and the ash was falling rapidly by 7:00. The water in the ponds, raceways and vats turned milk white with ash. We realized that we could do nothing for the fish and we did not know what the chemical properties of the ash were. We flushed the incubators several times to keep the ash from building up on the eggs. By midnight, it appeared that the fish were not being affected by any substance in the ash and were going to be able to make it through the night. The ash was sliding from the metal roofs like snow and was piling up on the ground.

When morning came, the ash cloud had left and the sun was shining. The landscape looked gray, and ash covered everything. The fish appeared to be okay and the water was starting to clear. Snowshoe rabbits around the hatchery appeared to be in a state of shock and you could walk up to them and nearly pick them up.

The Coeur d'Alene River area received about 1/4 inch and parts of the St. Joe received up to an inch of the powdery ash. All fish planting was stopped until the rain started coming about a week later. The ash made a slippery mud when wet and considerable caution had to be taken on mountain roads. We planted the St. Joe area during rain shower activity to reduce damage to our trucks. Fortunately, the month of June was very wet this summer and the roads were not dusty. We changed the oil and air cleaners frequently to protect the engines. It was a unique experience working in the ash.

FISH PRODUCTION

Fish Eggs received during the year:

Species	No.	Pick-off	% Eye-up	Fertile
Rainbow cutthroat hybrid from Hayden L.	526,101	102,015	81	424,086
Late spawning kokanee from Coeur d'Alene L.	229,174	59,903	74	169,271
Westslope cutthroat from broodstock	40,736	25,410	38	15,326
Kootenai rainbow from Kootenai River, MT.	29,256	1,717	94	27,539

Fish on hand at start of the fish year were:

Species	Number	Pounds
Rainbow fry	39,565	51
Westslope cutthroat	37,584	506
Kamloop rainbow fry	7,220	7
Kootenai River rainbow	11,987	30
Total	96,356	594

Fish on hand at the end of the fish year were:

Species	Number	Pounds
Westslope cutthroat fry	15,021	32
Westslope cutthroat fingerlings	153,327	4,230
Kootenai River rainbow fry	19,563	305
Total	187,911	4,567

Pounds produced during year:

On hand end of year	4,567 pounds
Planted during year	1,035
Fish transferred out	23
	5,625
Less fish on hand, beginning	594 pounds
	5,031
Less fish transferred in	549 pounds
Total Production	4,482 pounds *

Cutthroat fingerlings being held for Rochat Creek inflated production figures. Costs were, calculated on 1,035 pounds actually planted.

FISH RELEASES

Fry and Fingerling Plants

Water	Species	Pounds	Number	Size
Revett Lake	Kamloop Rb.	4	992	2-3
Upper Glidden Lake	Kamloop Rb.	4	992	2-3
Twin Lakes	Kamloop Rb.	50	1,770	3-4
Granite Creek (Pend Oreille)	Late Kokanee	98	131,908	1.5
Hayden Creek (Hayden Lake)	Rb. x Ct. Hyb.	258	394,300	2
Hayden Creek (Hayden Lake)	Cutthroat	500	12,432	4-6
S.F. CDA River	Rainbow	120	5,760	3-4
S.F. CDA River	Rainbow	1	4,306	1
Total		1,035	552,460	

Catchable Rainbow Planting Summary

Water	Pounds	Number	Size (in)
S.F. CDA River	995	3,018	8-12
N.F. CDA River	2,360	6,884	8-12
CDA River	9,450	27,930	8-12
N.F. St. Joe River	1,500	4,520	8-12
Big Creek-St. Joe	400	1,180	8-12
Marble Creek	1,900	6,010	8-12
St. Joe River	3,200	10,530	8-12
M.F. St. Maries River	70	203	8-12
Merry Creek	30	87	8-12
St. Maries River	3,810	11,689	8-12
Pine Pond	310	929	8-12
Gold Pond	655	1,982	8-12
Day Pond	530	1,597	8-12
Eagle Pond	1,800	5,520	8-12
Lower Glidden Lake	1,100	3,190	8-12
Elsie Lake	1,500	4,350	8-12
Dismal Lake	650	1,885	8-12
Total	30,260	91,504	

SPAWNTAKING OPERATIONS

Two Merwin Lake traps were installed in Coeur d'Alene Lake near Beauty Bay along shoreline spawning areas. Due to water and weather conditions, the kokanee didn't move into the trap in as great a number as expected. Some 229,174 eggs were taken in November and December and transferred to Mullan Hatchery. The egg pick-off was 59,903 dead eggs, for an eye-up of 74%. This resulted in 169,271 fertile eggs for hatching.

In April and May, the Hayden Creek spawning trap was **in** operation. The pure strain Westslope cutthroat were spawned and the eggs transferred to Sandpoint Hatchery. The rainbow x cutthroat hybrids were spawned and the eggs shipped to Mullan Hatchery. There were 526,101 green eggs taken and the pick-off was 102,015 dead eggs, for an eye-up of 81%. This resulted **in** 424,086 eyed eggs for hatching.

Mullan Hatchery has a small broodstock of Westslope cutthroat that have been spawned for several years. The fish are seven years old and the egg fertility has dropped due to old age of the fish. Some 40,736 Westslope cutthroat eggs were taken. The pick-off was 25,410 dead eggs, for an eye-up of 38%. Some 15,326 eyed eggs were hatched.

FISH HEALTH

During the volcanic ash fallout, the Westslope cutthroat fingerlings in Pond #3 developed a bacterial gill infection. The water flow through the pond was greatly increased and the problem disappeared. The loss was estimated at between 500 to 800 fingerlings.

In September, Pond #2 was becoming overcrowded and bacterial gill infection was noted. Malachite green was used in a 60 minute bath and in the concentration of 1 ppm. The fingerlings were removed from the pond and placed in a raceway. They were given a salt bath treatment for a week and replaced **in** the pond. Some 9,000 of the total fish were kept in the raceway to alleviate crowding in the dirt pond.

A loss was sustained on one transport load when the truck developed engine trouble on Lost Trail Pass in Montana. Some 3,451 fish were lost due to being held in the transport an additional twelve hours.

FISH FEED UTILIZED

Oregon Moist Pellet

Size	Pounds	Price per pound	Cost
Starter	160	34t	$54.40
1/32	50	31.8	15.90
	300	34	102.00
1/16	350	31.8	111.30
	350	34	119.00
3/32	400	31.8	127.20
	5,000	34	1,700.00
1/8	1,350	34	459.00
1/4	100	34	34.00
	8,060		$2,719.40

State Contract Dry Fish Food

Size	Pounds	Price per pound	Cost
5/32	250	18.84¢	$47.10
7/32	1,600	18.84	301.44
	150	16.0	24.00
	2,000		$372.54

Total fish food for year	10,060 pounds	$3,121.94
Conversion rate for hatchery production	1.796	
Conversion rate for total feed fed	2.24	
Cost per pound for fish feed	68.98¢ per pound	

FISH TRANSFERS

Mullan Hatchery received 95,130 rainbow (31,500 pounds) from Hayspur Hatchery for redistribution.

There were 77,050 rainbow x cutthroat hybrid fry that were transferred to Sandpoint Hatchery for rearing. These were later planted in Hayden Creek, a tributary to Hayden Lake. We received 169,133 two inch Westslope cutthroat from Sandpoint Hatchery to be reared for a year in the ponds, and then to be planted in Hayden Creek on Hayden Lake.

HATCHERY IMPROVEMENTS

In October 1979, the Fish and Game construction crew installed a gravel bedding around a main water pipeline that they had installed the year before. They used a tractor loader to cover the pipeline with gravel.

They removed the raceway drain line and replaced it with three separate drain lines.

They constructed concrete dividers in the three small raceways to help distribute the water evenly between the three raceways. The three raceways share a common water basin and the concrete dividers in the basin made it possible to divide the water between the three raceways evenly.

The shop building was a cold storage plant at one time and the refrigeration coils were still hanging from the ceiling. These were cut down and were cut into pieces and carried from the shop for storage.

The construction crew returned in June and replaced 90 feet of main water line pipe that ran through the hatchery building to supply the vats. They replaced it with a 10 inch diameter PVC plastic water line. They put collars at intervals and installed uprights to feed the vats and incubators. The domestic water line coming through the hatchery was raised above head level because there wasn't room for it in the trench with the new PVC pipe line. Hose bibs were placed on the domestic water line to supply supplemental water to the incubators.

MISCELLANEOUS ACTIVITIES

The domestic water supply reservoir was cleaned and flushed by the Idaho State Highway Department. The reservoir collects a lot of silt from the new freeway system landfills above the water supply. It has to be cleaned every two years until the erosion stops.

ACKNOWLEDGMENTS

Hatchery staffing during the year:

Bob Moore	Fish Hatchery Superintendent I
Mary Jutila	20 hours week Fish and Game Laborer and 20 hours week CETA employee
Marie Sisson	4 months CETA employee
Howard Whitesides	2 mos. Bio-Aide to drive fish truck (F&G)
Ron Wilson	2 months CETA employee
Trevor Taylor	3 months CETA employee